

**Claims:**

1. An electro-chemical deposition system, comprising:
  - a) a mainframe having a mainframe wafer transfer robot;
  - b) a loading station disposed in connection with the mainframe;
  - c) one or more processing cells disposed in connection with the mainframe;
  - d) an electrolyte supply fluidly connected to the one or more electrical processing cells;
  - e) a spin-rinse-dry (SRD) chamber disposed between the loading station and the mainframe; and
  - f) a thermal anneal chamber disposed adjacent the loading station.
2. The system of claim 1 wherein the thermal anneal chamber comprises a rapid thermal anneal chamber having a heater plate.
3. The system of claim 2 wherein the heater plate comprises an atmospheric pressure heater plate.
4. The system of claim 1, further comprising:
  - e) a system controller adapted to control operations of one or more components of the electro-chemical deposition system.
5. The system of claim 4, wherein the thermal anneal chamber further comprises a gas inlet adapted to introduce one or more gases into the thermal anneal chamber.
6. The system of claim 5 wherein the system controller controls the gas inlet to the chamber to provide a chamber environment having an oxygen content of less than 100 parts per million.

PATENT

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7. The system of claim 6 wherein the gas inlet is connected to a nitrogen gas source to introduce nitrogen into the chamber.
8. The system of claim 6 wherein the gas inlet is connected to a nitrogen gas source and a hydrogen gas source to introduce nitrogen and hydrogen into the chamber, wherein the hydrogen content is maintained at less than about 4%.
9. The system of claim 1 wherein the loading station comprises:
  - i) one or more wafer cassette receiving areas;
  - ii) one or more loading station wafer transfer robots for transferring a wafer between the loading station and the SRD station and between the loading station and the thermal anneal chamber; and
  - iii) a wafer orientor.